7. M&M's

Program Name: MandMs.java Input File: mandms.dat

My kid brother collected a lot of M&M's on Halloween, and being a little guy, he was playing with them before he ate them. He showed me his game -- he would spread a packet of M&M's out on the table, and either eat exactly one, or would arrange them in a rectangle of width > 1 (only if that was possible) and eat all rows but one in a single mouthful. Even if a rectangular arrangement were possible, he might still decide to eat only one. He would the repeat this with the remaining M&M's.

He asked me whether I could tell him how many mouthfuls it would take him, at a minimum, to finish off a packet, if he counted the M&M's he started out with. I could not tell him, but perhaps you can.

Input

The first line has the number of test cases, `T`. `T` lines follow.
Each test case contains a single integer `M`, the number of M&M's in the packet.

Output

The output should have a single integer for each test case, the fewest mouthfuls he would take to finish the packet.

Constraints

```
T <= 100000
1 <= M <= 1000000000
```

Example Input File

```
5
1
2
3
5
100
```

Example Output to Screen

```
1
2
3
4
3
```